The Road to Self-Driving Cars

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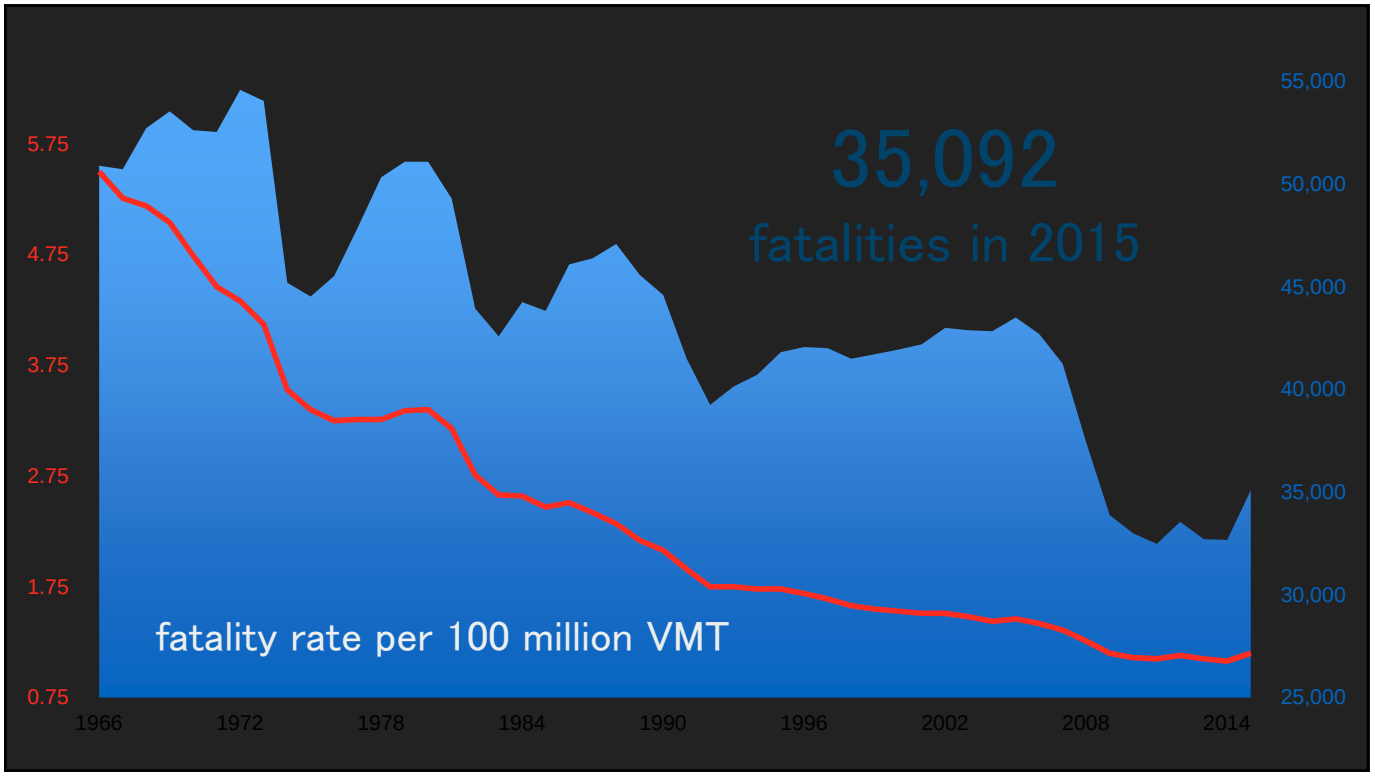
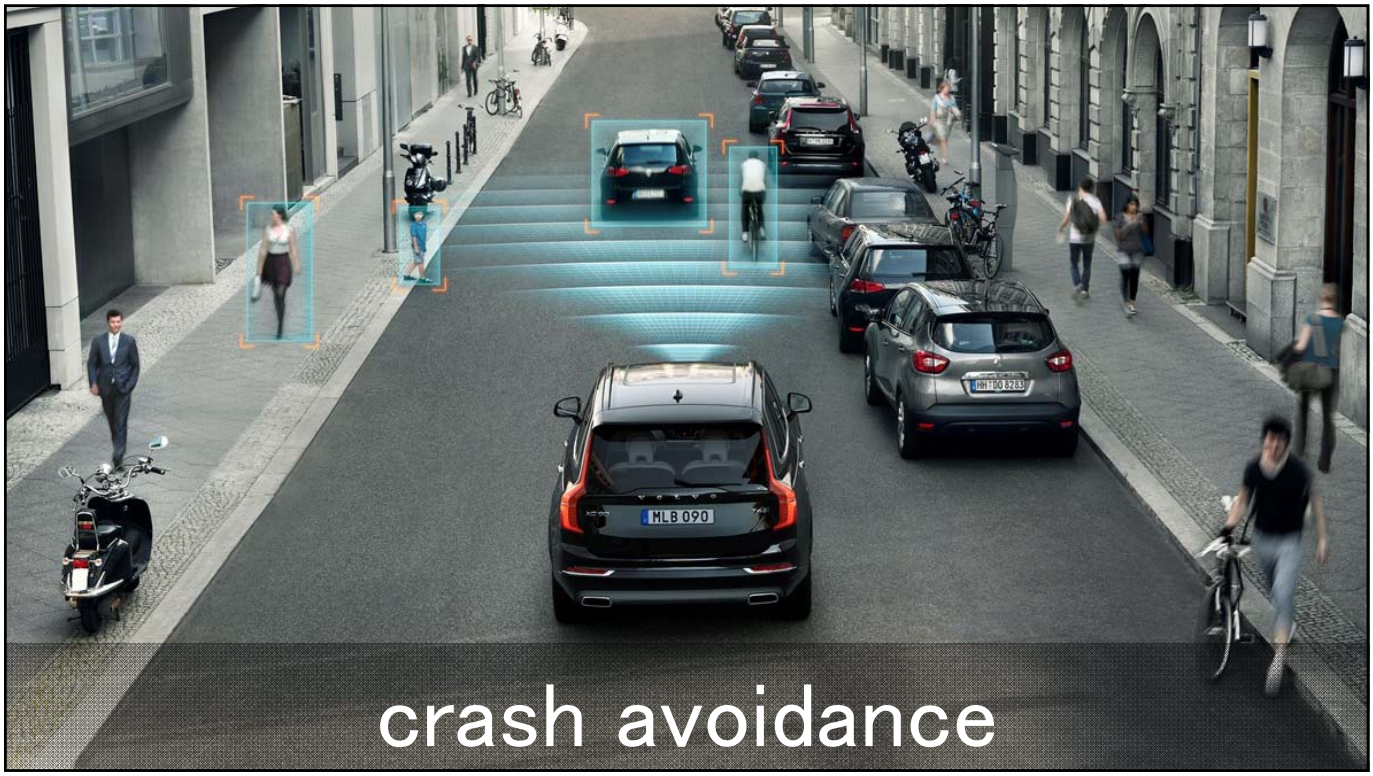


94% of crashes caused by driver

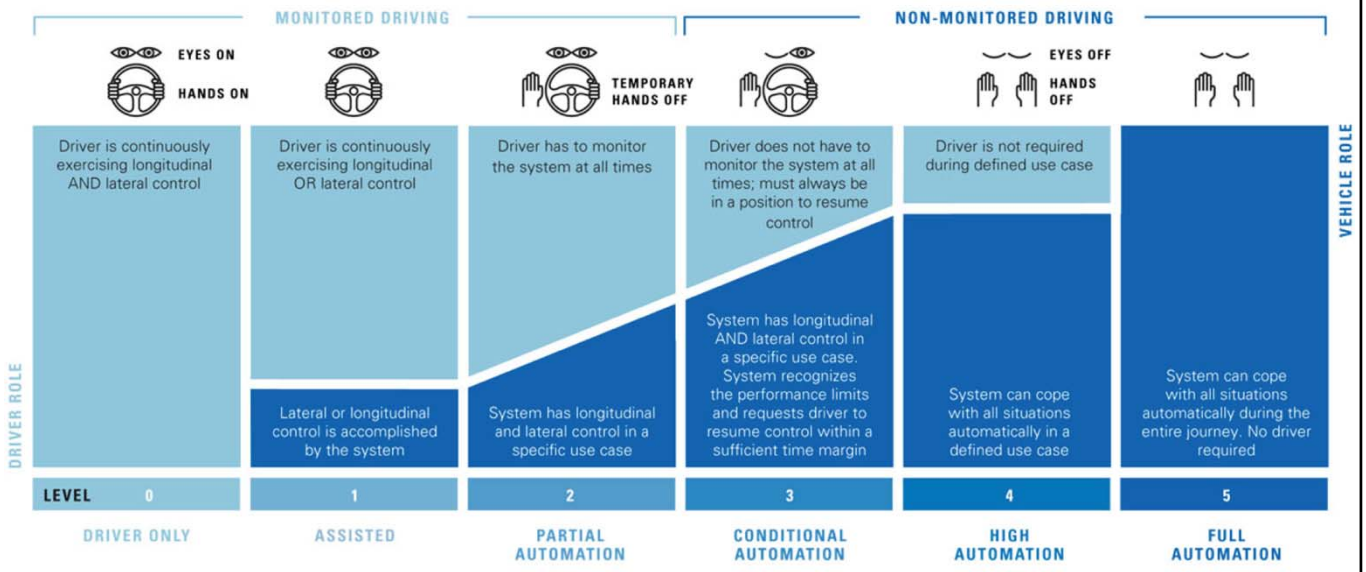
$836,000,000,000

crash worthiness



crash avoidance

Levels of Automation



rulemaking takes years

Dec. 2003—Rep. King introduces legislation in House
May 2005—Rep. King reintroduces legislation in House
Nov. 2005—Sen. Clinton introduces legislation in Senate
Feb. 2007—Sen. Clinton introduces legislation in Senate
Feb. 2007—Rep. Schakowsky introduces legislation in House
Feb. 2007—Senate Commerce Committee holds hearing
May. 2007—Senate Commerce Committee discharges bill
Dec. 2007—Legislation passes House

2003 2005 2007 2009 2011 2013 2015 2017

Feb. 2008—Legislation passes Senate
Feb. 2008—Signed by President, becomes Public Law 110-189
Dec. 2010—NHTSA issues NPRM
OMB review
Mar. 2011—NHTSA holds public meeting and workshop
Apr. 2014—NHTSA issues final rulemaking
May 2016—Compliance phase-in begins
May 2018—Full compliance mandatory

case study—rear visibility

Pittsburgh Post-Gazette®
"In the seven-and-a-half years of my presidency, self-driving cars have gone from sci-fi fantasy to an emerging reality with the potential to transform the way we live."

Federal Automated Vehicles Policy
Accelerating the Next Revolution
In Roadway Safety
September 2016

I.	vehicle performance guidance	outlines a 15 point "Safety Assessment" for the safe design, development, testing & deployment of automated vehicles
II.	model state policy	outlines the distinction between federal and state roles in regulating autonomous vehicles

III.	current regulatory tools	outlines the agency's current regulatory tools and authorities that modified or streamlined to accelerate autonomous vehicle deployment
IV.	modern regulatory tools	identifies potential new regulatory tools and statutory authorities that the agency may consider adopting or requesting

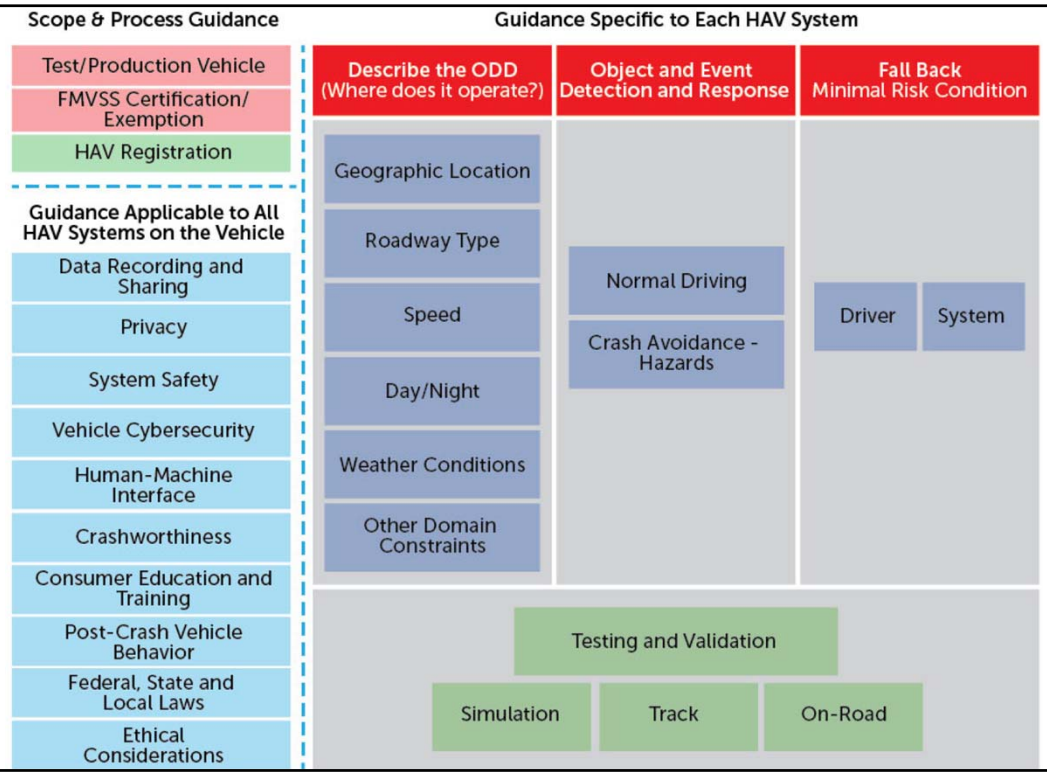
15 point safety assessment

- operational design domain
- object event detection & response
- minimal risk condition
- validation methods
- registration & certification

- data recording & sharing
- post crash behavior
- privacy
- system safety
- vehicle cybersecurity

- human machine interface
- crashworthiness
- consumer education & training
- ethical considerations
- federal, state, & local laws

framework for vehicle performance guidance



safety assessment letter

✓ Meets the guidance area

✗ Does not meet the guidance area

n/a Guidance area not applicable

operational design domain	✓
object event detection & response	✓
minimal risk condition	✓
validation methods	✓
registration & certification	✓
data recording & sharing	✓
post crash behavior	✗
privacy	✓
system safety	✓
vehicle cybersecurity	✓
human machine interface	✓
crashworthiness	✓
consumer education & training	n/a
ethical considerations	✗
federal, state, & local laws	✓

actions for states

foster safe & rapid deployment

insurance requirements

determine servicing requirements

licensing and registration

compiling crash data

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